

a contact on the substrate configured to electrically engage the bumped contact, the contact comprising a recess in the substrate having a size approximately equal to that of the bumped contact, and a plurality of flexible leads cantilevered over the recess configured to support the bumped contact within the recess and to move within the recess by a distance sufficient to accommodate variations in a size, a shape or a planarity of the bumped contact, each lead having a selected spring constant and at least one projection configured to penetrate the bumped contact.

2. (amended) The interconnect of claim 1 further comprising a connecting segment substantially encircling a periphery of the recess configured to electrically connect the leads to one another.

5. (amended) The interconnect of claim 1 wherein the recess has four sides and the plurality of leads comprise four leads on the four sides.

6. (amended) An interconnect for testing a semiconductor component having a bumped contact comprising:
a substrate;
a recess in the substrate; and
a plurality of flexible leads on the substrate cantilevered over the recess configured to electrically engage the bumped contact and to move within the recess by a distance sufficient to accommodate variations in a size, a shape or a planarity of the bumped contact, each lead having a cantilever length, a width, a thickness and a modulus of elasticity selected to provide a desired spring constant, and a shape that substantially matches a topography of the bumped contact.

7. (amended) The interconnect of claim 6 wherein each lead includes at least one projection configured to penetrate the bumped contact.

8. (amended) The interconnect of claim 6 further comprising a connecting segment on the substrate electrically connecting the leads to one another.

9. (amended) The interconnect of claim 6 wherein each lead comprises an enlarged portion on the substrate and a terminal portion cantilevered over the recess for contacting the bumped contact.

10. (amended) The interconnect of claim 6 wherein each lead comprises a metal selected from the group consisting of tungsten, titanium, nickel, platinum, iridium, or vanadium.

11. (amended) The interconnect of claim 6 wherein the recess has four sides and the plurality of leads comprise four leads on the four sides.

12. (amended) An interconnect for testing a semiconductor component having a bumped contact comprising:
a substrate;
a recess in the substrate; and
a plurality of leads on the substrate cantilevered over the recess and configured to support and to electrically engage the bumped contact within the recess, and to move in a z-direction within the recess to accommodate variations in a height or a diameter of the bumped contact, each lead having a radius of curvature substantially equal to a radius of the bumped contact.

17. (amended) The interconnect of claim 12 wherein each lead has a cantilevered length, a width and a thickness configured to provide a desired spring constant.

18. (amended) The interconnect of claim 12 wherein each lead has an enlarged portion on the substrate and a terminal portion cantilevered over the recess for contacting the bumped contact.

25. (amended) A system for testing a semiconductor component having a bumped contact comprising:

a carrier for retaining the semiconductor component;
an interconnect on the carrier comprising a substrate, a recess in the substrate having a size approximately equal to that of the bumped contact, and a plurality of leads cantilevered over the recess configured to electrically engage the bumped contact and to move within the recess by a distance sufficient to accommodate variations in a size, a shape or a planarity of the bumped contact, each lead comprising at least one projection configured to penetrate the bumped contact; and

a test circuitry in electrical communication with the leads configured to apply test signals to the component.

26. (amended) The system of claim 25 wherein each lead includes a non bonding outer layer and has a radius of curvature substantially equal to a radius of the bumped contact.

27. (amended) The system of claim 25 wherein the semiconductor component comprises an element selected from the group consisting of semiconductor dice, semiconductor packages and semiconductor wafers.

31. (amended) A system for testing a semiconductor component having a bumped contact comprising:

a testing apparatus;

an interconnect mounted to the testing apparatus comprising:

a substrate;

a recess in the substrate having a size approximately equal to that of the bumped contact; and

a plurality of leads on the substrate configured to electrically engage the bumped contact, each lead cantilevered over the recess and configured to move within the recess by a distance sufficient to accommodate variations in a size, a shape or a planarity of the bumped contact, each lead having a cantilever length, a width, a thickness and a modulus of elasticity selected to provide a desired spring constant, and a shape substantially matching a topography of the bumped contact; and

a test circuitry in electrical communication with the connecting segment.

32. (amended) The system of claim 31 wherein a connecting segment substantially encircles a periphery of the recess and electrically connects the leads.